

## II. REMARKS

### Formal Matters

Claims 1-19 are pending after entry of the amendments set forth herein.

Claims 1-19 were examined and were rejected.

Claims 1, 3, 4, 11, and 13 are amended. The amendments to the claims were made solely in the interest of expediting prosecution, and are not to be construed as acquiescence to any objection or rejection of any claim. The amendments to claims 4, 11, and 13 are editorial in nature; no new matter is added by the amendments to claims 4, 11, and 13. Support for the amendments to claims 1 and 3 is found in the claims as originally filed, and throughout the specification, in particular at the following exemplary locations: claim 1: paragraphs 0034 and 0037; claim 3: paragraphs 0062 and 0063. Accordingly, no new matter is added by these amendments.

Applicants respectfully request reconsideration of the application in view of the remarks made herein.

### Rejection under 35 U.S.C. §103(a)

Claims 1-19 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Garcia-Alles ((2002) *J. Biol. Chem.* 277:6934; “Garcia-Alles”) in view of Croteau et al. ((1993) *Arch. Biochem. Biophys.* 307:397; “Croteau”).

The Office Action stated that:

- 1) Garcia-Alles teaches that a phosphotransferase is reacted with a suicide inhibitor and that the result is identified by mass spectroscopy;
- 2) Croteau teaches that enzymes are reacted with radiolabelled suicide substrates, and that the enzymes were purified by gradient elution from DEAE Sepharose Fast Flow from crude gland extracts.

The Office Action concluded that it would have been obvious to purify the enzymes of Garcia-Alles by any known method of enzyme purification such as those shown by Croteau. Applicants respectfully traverse the rejection.

Claim 1 as amended recites a method for identifying a terpene synthase. As discussed in the instant specification, new, previously undescribed terpene synthases can be identified by covalently modifying an amino acid in the previously undescribed terpene synthase, and determining the amino acid sequence of at least a portion of the enzyme. Specification, paragraph 0034. A test enzyme is contacted with a suicide substrate, e.g., a suicide substrate that covalently modifies a known terpene synthase. If the test enzyme is covalently modified by the suicide substrate, the amino acid sequence of at least a portion of the test enzyme is determined. In this manner, new terpene synthases can be identified. Specification, paragraph 0037.

Garcia-Alles and Croteau, alone or in combination, do not disclose or suggest a method as recited in claim 1 as amended, where the method involves contacting a sample comprising an enzyme with a suicide substrate for a terpene synthase, which contacting results in covalent modification of the enzyme, and determining an amino acid sequence of at least a portion of the covalently modified enzyme. As such, Garcia-Alles and Croteau, alone or in combination, cannot render any of claims 1-19 obvious.

Conclusion as to the rejection under 35 U.S.C. §103(a)

Applicants submit that the rejection of claims 1-19 under 35 U.S.C. §103(a) has been adequately addressed in view of the remarks set forth above. The Examiner is thus respectfully requested to withdraw the rejection.

Rejection under 35 U.S.C. §112, first paragraph

Claims 1-19 were rejected under 35 U.S.C. §112, first paragraph, as allegedly lacking enablement.

The Office Action stated that the specification is enabling for terpene synthase; and stated that the specification does not reasonably provide enablement for “an enzyme.”

Without conceding as to the correctness of this rejection, claim 1 is amended to recite a method for identifying a terpene synthase.

Conclusion as to the rejection under 35 U.S.C. §112, first paragraph

Applicants submit that the rejection of claims 1-19 under 35 U.S.C. §112, first paragraph, has been adequately addressed in view of the remarks set forth above. The Examiner is thus respectfully requested to withdraw the rejection.

Rejection under 35 U.S.C. §112, second paragraph

Claims 1-19 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite.

*Claim 1*

The Office Action stated that “selected” is unclear.

Without conceding as to the correctness of this rejection, “selected” is deleted from claims 1, 4, 11, and 13.

The Office Action stated that “provides for” does not positively recite what occurs.

Without conceding as to the correctness of this rejection, claim 1 is amended to recite “results in” instead of “provides for.”

*Claim 3*

The Office Action stated that “tandem mass spectroscopy” lacks antecedent basis.

Claim 3 is amended, as shown above, to recite “before said determining step.”

*Claim 12*

The Office Action stated that it is unclear if Markush terminology is intended.

Markush groups are listings of specified alternatives from a group. Claim 12 recites that the cyclopropyl-modified polyprenyl diphosphate is selected from a list of such compounds. Claim 12 is therefore in proper Markush format. As such, claim 12 is clear and need not be amended.

Conclusion as to the rejection under 35 U.S.C. §112, second paragraph

Applicants submit that the rejection of claims 1-19 under 35 U.S.C. §112, second paragraph, has been adequately addressed in view of the remarks set forth above. The Examiner is thus respectfully requested to withdraw the rejection.

### III. CONCLUSION

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number BERK-033.

Respectfully submitted,  
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